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Fruit

OUTLOOK & SITUATION

NON-DEPOSITORY.

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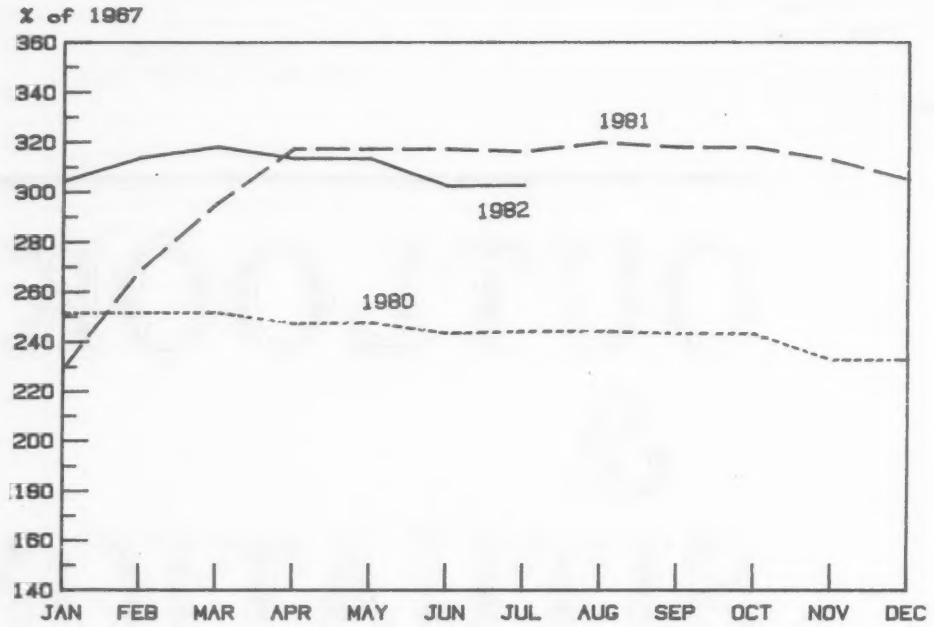
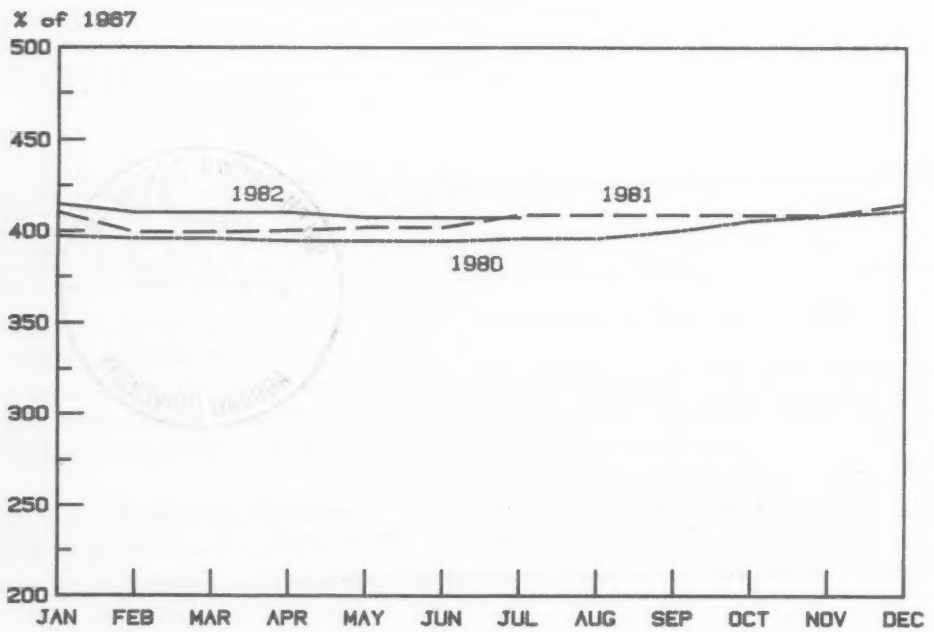
Frozen Fruit and Juices: BLS Wholesale Price Index



Dried Fruit: BLS Wholesale Price Index



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Summary

Larger Noncitrus Supplies Weaken Prices This Fall

Noncitrus production in 1982 was forecast in early August at 12.7 million tons, up almost 7 percent from last year. However, most summer fruit crops are smaller than a year ago. Consequently, f.o.b. prices for summer fruits have generally ranged above 1981 levels. Despite a 17-percent smaller pear crop, supplies of fresh noncitrus fruit this fall are expected to be substantially larger than last year, reflecting an 11-percent larger apple crop and 21 percent more grapes. Therefore, prices this fall will likely decline from the current high levels.

The 1982/83 pack of most canned fruit is expected to be down from last season. However, the total supply will be adequate for market needs because of significantly larger carryin stocks. The sluggish economy and generally weak shipments will moderate price increases. Occasional promotional allowances will probably be offered to stimulate sales during 1982/83.

Prospects indicate ample supplies of dried fruit this season. Raisin production will likely be larger than last year, but prune production will be smaller. Even with smaller carryin stocks, this season's production will bring the total dried fruit supply above last year, likely weakening prices.

Sharply larger packs of frozen strawberries and tart cherries have been recorded this year. Even with substantially reduced imports of frozen strawberries from Mexico, total supplies will still be ample. Prices of both frozen cherries and strawberries are expected to weaken.

The smaller remaining supplies of citrus fruit and good demand have kept on-tree returns to citrus growers considerably above a year ago. Returns are expected to remain high until the new harvest gets underway this fall.

The smaller Florida orange crop has resulted in reduced packs of most processed items this season. Even with a sharply larger carryover and heavy imports, the total supply of frozen concentrated orange juice (FCOJ)

available for marketing will be substantially less than last season. Although f.o.b. prices of FCOJ have been below a year ago, the sluggish economy has caused movement to lag last year's pace. Even if shipments remain at this level, the carryover will be considerably lower than last season. FCOJ prices are likely to remain steady during the balance of the season.

Smaller crops of almonds and walnuts are forecast this year. Supplies will still be adequate because of a larger carryover. Demand prospects remain good for both almonds and walnuts, so, grower prices are likely to strengthen this season.

Per capita consumption of all tree nuts declined from 1.73 pounds in 1980 to an estimated 1.67 pounds in 1981. The decline was caused entirely by a sharp decrease in pecan consumption. Of the five major nuts, only almonds and walnuts registered gains.

Fruit Situation

GENERAL PRICE OUTLOOK

The index of prices received by growers for fresh and processing fruit rose for the fifth straight month to 214 (1977=100) in August, up 11 percent from July. Higher prices for oranges contributed most to the increase, but lower prices for apples were partially offsetting. Compared with a year ago, the index was up 66 percent with higher prices reported for all fruit except apples. Because of increased supplies of apples, pears, and citrus, fruit prices are likely to decline seasonally this fall but are expected to remain above a year ago.

Primarily reflecting substantially lower banana prices, the July index of consumer prices for fresh fruit reversed its upward trend and declined slightly from June. The index now is 14 percent above a year ago as higher prices were reported for all fruits with orange prices up almost 34 percent, leading the way. Retail prices will likely decline this fall when larger supplies of apples and citrus fruits become available. Nevertheless, with the continued rise in costs of marketing, retail prices will remain higher than a year earlier.

Retail prices of processed fruit have been moderately higher this year than last. The July index of processed fruit prices reported by the Bureau of Labor

Table 1—Index of annual and quarterly price received by growers for fresh and processing fruit

Year	1977=100				
	Annual	1st	2nd	3rd	4th
1980	124	125	131	116	123
1981	129	122	126	125	142
1982		144	156	[1]203	

[1]Two-month average.

Source: Agricultural Prices, SRS.

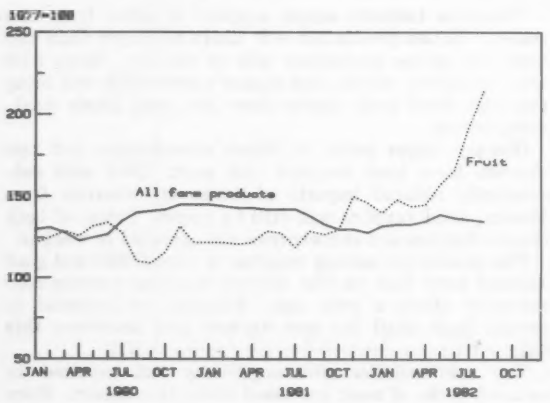
Table 2—Annual and quarterly consumer price indexes for fresh fruit

Year	1967=100				
	Annual	1st	2nd	3rd	4th
1980	264	238	265	290	261
1981	278	256	276	302	279
1982		289	322	[1]332	

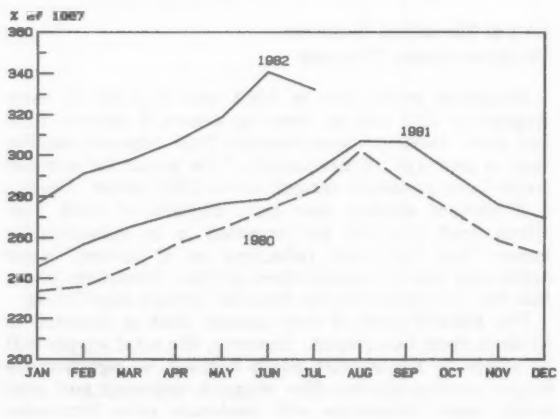
[1]July's figure.

Source: Bureau of Labor Statistics, U.S. Department of Labor.

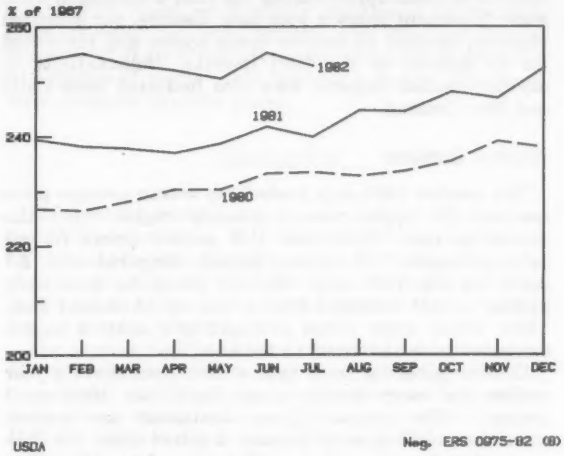
Price Received by Producers, Fruit and All Farm Products



Fresh Fruits BLS Consumer Price Index



Canned Fruit: BLS Wholesale Price Index



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Statistics (BLS), at 148.5, was 3.8 percent higher than last year. The increase was due primarily to higher prices for canned fruit and dried fruit. Retail prices of frozen fruits and juices have declined steadily since April, reflecting ample supplies and slack movement.

Sluggish movement also weakened wholesale prices of processed fruit. The July BLS wholesale price index for canned fruit declined to 252.9, down 1 percent from June, but still 5.4 percent above a year ago. Wholesale prices of both canned and frozen fruit juice also fell slightly, but dried fruit prices remained steady. Although the total pack of most canned fruit will be down this year, the total supply will be adequate to meet demand because of larger carryover stocks. Thus, if the sluggish economy and high unemployment persist both here and abroad, prices of canned fruit will not likely rise appreciably.

With larger production of raisins and frozen strawberries in prospect, wholesale prices of these two items may weaken. The sluggish movement will also likely keep prices of FCOJ stable at least through the balance of the season.

NONCITRUS

Production of noncitrus crops in 1982 was forecast in early August at 12.7 million tons, up almost 7 percent from last year. Despite the overall increase, most summer fruit crops are smaller than a year ago. Consequently, f.o.b. prices for summer fruit mostly have been above 1981 levels. Supplies of fresh noncitrus fruit this fall are expected to be substantially larger than last year, mainly reflecting larger crops of apples and grapes. However, the pear crop will be 17 percent smaller.

Supplies of most processing fruit will be adequate to meet market needs. The canned fruit pack will be down, but a large carryover will result in adequate supplies. The total frozen fruit pack will be significantly larger than last year, reflecting a sharply increased pack of strawberries and tart cherries. Supplies of dried fruit will be ample, reflecting an expected large production of raisins. Consequently, prices may remain relatively steady.

Table 3—U.S. noncitrus fruit: Total production, 1980 1981, and indicated 1982

Crop	1980	1981	1982
		1,000 tons	
Apples	4,414	3,872	4,292
Apricots	129	89	102
Cherries, sweet	172	153	140
Cherries, tart	109	67	168
Grapes	5,595	4,458	5,376
Nectarines	191	182	150
Peaches	1,540	1,394	1,109
Pears	897	892	743
Prunes and plums	823	767	591
Total	13,870	11,874	12,671

Source: Crop Production, SRS.

Table 4—Frozen fruit and berries cold storage holdings

Commodity	June 30		
	1980	1981	1982
		1,000 pounds	
Apples	55,784	57,311	52,291
Apricots	7,844	10,073	6,061
Cherries	28,172	36,662	28,285
Grapes	6,019	3,248	2,857
Peaches	20,288	21,921	25,335
Blackberries	6,084	15,714	12,512
Blueberries	15,981	8,028	5,688
Boysenberries	2,965	5,317	4,920
Raspberries, Red	5,637	4,663	4,848
Strawberries	198,776	165,139	135,392
Other fruits and berries	67,860	78,073	69,036
Total	415,410	406,149	347,225

Source: Cold Storage Reports, SRS.

Table 5—Apples: Regional production, 1980,1981, and indicated 1982

Area	1980[1]	1981[1]	Indicated 1982
		Billion pounds	
East	3.37	2.78	3.14
Central States	1.44	1.15	1.46
West	4.02	3.81	3.98
Total U.S.	8.83	7.74	8.58

[1]Includes unharvested production and harvested not sold (million pounds): United States: 1980—18.0, 1981—47.7

Source: Crop Production, CRB, SRS.

Apples

Substantially Larger Crop Expected

At 8.58 billion pounds, the Nation's apple crop is forecast 11 percent above last year's crop but 3 percent below the 1980 record. The forecast is up from last year in all regions, but some States in each region suffered reduced crops because of adverse weather. In general, increases in the Great Lake States and most Eastern States more than offset decreases in California and some Central and Southern States. Production in the Eastern States is forecast at 3.14 billion pounds, 13 percent above last year. New York, the region's leader, is expected to

harvest 1.13 billion pounds, up 41 percent from 1981. The crop in the Central States is forecast at 1.47 billion pounds, 27 percent larger. Michigan, the No. 1 Central State, expects a near-record crop of 950 million pounds. At 3.98 billion pounds, the Western States' crop is forecast 4 percent above last year. Washington expects a record crop of 3.10 billion pounds, up 13 percent from last year, and 3 percent greater than the 1980 record. Fruit size appears to be good and new bearing acreage continues to come into production.

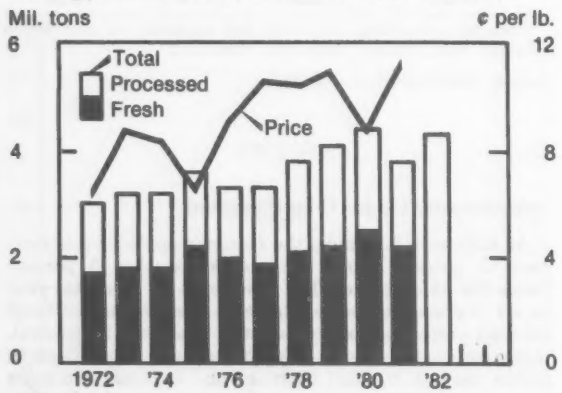
Utilization of the 1981 Crop

Because of the smaller crop, substantially fewer apples were used for fresh market and processing in 1981 than in 1980. However, the proportion consumed as fresh increased from 56 percent in 1980 to 58 percent in 1981. Apples processed for all categories were down except for drying and freezing. Consequently, the share of processing apples used for these two categories increased—from 4.3 percent to 5.3 percent for freezing and 5 percent to 6 percent for drying. The increase in freezing was probably attributed to smaller supplies of frozen tart cherries and strawberries. Even though apples used for canning and juice and cider were down sharply, the relative share of total processed use remained unchanged at 31 and 55 percent respectively. Apples used for other products (vinegar, wine, jam, and fresh slices for pie filling) declined in both absolute and relative terms.

Exports and Imports Both Down

Reflecting a strong dollar, higher prices, and the sluggish economy abroad, U.S. exports of fresh apples totaled 273,727 metric tons during July 1981-June 1982, down 10 percent from a year ago. The decrease was shared by all major markets except Canada, where shipments rose 67 percent from a year ago, partially because of a reduced Canadian crop in 1981. Good demand from Norway and Sweden were more than offset by sharply reduced shipments to England, Finland, and the Netherlands. Consequently, total exports of fresh apples to Europe were down 7 percent from the previous year. Exports were also weak for the Far East, Mideast, and Latin America.

U.S. Apple Production, Utilization and Prices



Utilized production. Season average grower prices. 1982 indicated total production.

USDA

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Largely because of the smaller crop in Canada, U.S. imports of fresh apples during the first 6 months of 1982 were 18 percent below a year ago. Canada, our principal supplier, shipped 14 percent fewer apples and accounted for 47 percent of the total imports. Substantially to sharply smaller imports were also indicated from Chile and New Zealand.

Market Outlook

The smaller 1981 crop pushed the season average price received by apple growers sharply higher than the preceding year. Estimated U.S. grower prices for all sales averaged 11.2 cents a pound, compared with 8.7 cents for the 1980 crop. Grower prices for processing apples in 1981 averaged $106 a ton, up 26 percent from 1980. Fresh apple prices averaged 15.6 cents a pound, compared with 12.1 cents in 1980.

Grower prices for fresh apples have been above a year earlier for every month since September 1981 until August. The August price continued to weaken somewhat—falling to 13.3 cents a pound from the July price of 16.7 cents, and was 16 percent lower than last year. Processor demand for this year's apples is uncertain. Demand for juice apples looks promising in view of good demand for canned juice. Although stocks of canned apple items are smaller than a year earlier, slack movement may discourage packers to bid aggressively for processing apples. Larger supplies of frozen strawberries and tart cherries may reduce demand for apples for freezing. So, the larger crops in the Eastern and Central States are likely to weaken apple prices for processing use. The Michigan Processing Apple Growers Marketing Committee recently recommended a minimum base price to processors for this year's apples that is substantially below last year.

The fresh apple market will be dominated by another large crop in the Pacific Northwest. A record crop in

Table 6—Processed apples: Season average price per ton received by growers, by type of use, principal States, 1979-81

Use and State	1979	1980	1981
		Dollars	
Canning:			
Michigan	134.00	102.00	145.00
New York	118.00	94.00	138.00
Pennsylvania	117.00	106.00	119.00
Virginia	110.00	96.00	129.00
Washington	132.00	70.00	80.00
West Virginia	108.00	103.00	128.00
United States	125.00	97.40	120.00
Juice and cider:			
California	155.00	69.00	59.00
Michigan	102.00	72.00	120.00
New York	82.00	76.00	110.00
Pennsylvania	91.00	64.00	93.00
Virginia	80.00	72.00	104.00
Washington	108.00	76.00	94.00
United States	103.00	73.70	94.90
Frozen:			
Michigan	130.00	106.00	162.00
New York	142.00	124.00	178.00
United States	133.00	112.00	160.00
Dried:			
California	165.00	94.00	80.00
New York	110.00	90.00	134.00
United States	135.00	78.70	96.40

Source: Noncitrus Fruits and Nuts Mid-Year Supplement, SRS.

Washington is likely to exert some downward pressure on prices later in the season. In addition, the export outlook for 1982/83 is not encouraging because of larger apple crops reported in both Canada and Western Europe. However, if the 1982/83 citrus crop remains small, limited supplies of citrus could somewhat dampen the downward pressure on apple prices.

Avocados

The 1981/82 avocado crop is estimated at 175,800 tons, down 35 percent from the record 268,800 a year earlier. California, the leading producer, accounted for 85 percent of the total, with Florida providing the remainder. The California and Florida crops were down this season by 37 and 16 percent, respectively.

The smaller California crop primarily reflects a sharp downturn in yield, rather than bearing acreage. Bearing acreage, at 64,798 acres, actually increased 9 percent from the previous season. Preliminary estimates for 1982/83 indicate that bearing acreage should advance moderately again.

Florida acreage continues to follow the California pattern. In 1981/82, the bearing acreage totaled 9,300, compared with 9,100 the previous season. Certified shipments of Florida avocados during 1981/82 are estimated at 977,000 bushels, down 12 percent from a year earlier.

F.o.b. prices for California avocados have been sharply higher than a year ago. A 1-layer carton of 10-12's was quoted at $16.63 in late August. Florida avocado prices, on the other hand, have been moderately lower than in 1981. F.o.b. prices for a 1-layer carton were $5.81 on August 21, 7 percent less than a year earlier.

The anticipated increase in California bearing acreage and the alternate year bearing nature of avocado production will likely produce a moderately larger crop next season.

Table 7—Avocados: Acreage, production, yield per acre, 1977/78-1981/82 seasons

Season[1]	Acreage			Production	Yield per bearing acre
	Bearing	Non-bearing	Total		
	1,000 acres			*1,000 tons*	*tons*
California:					
1977/78	34.4	13.5	47.9	107.0	3.11
1978/79	40.0	12.0	52.0	123.0	3.08
1979/80	45.1	13.2	58.3	75.0	1.66
1980/81	59.5	16.3	75.8	238.0	4.00
1981/82[2]	64.8	14.8	79.6	150.0	2.31
Florida:					
1977/78	7.3	14.0	21.3	10.7	1.47
1978/79	7.7	1.8	9.5	23.1	3.00
1979/80	8.3	2.2	10.5	27.3	3.29
1980/81	9.1	1.9	11.0	30.8	3.38
1981/82[2]	9.3	1.7	11.0	25.8	2.77

[1]Season for California November 1 - October 31; for Florida late June-February. [2]Preliminary.

Sources: California and Florida Crop and Livestock Reporting Services.

Cherries

Sweet Cherry Crop Down Moderately

Final estimates place the 1982 sweet cherry crop at 139,900 tons, a 9-percent drop from 1981. Oregon and California recorded sharp downturns that more than offset production gains in five other States.

Despite overall reduced supplies, f.o.b. prices for fresh bing cherries from the Yakima Valley were lower than last year. For the week ending July 31, Washington cherries traded at $15 per 20-pound lug, compared with $16 a year earlier.

Smaller output over the past 2 years and an industry-wide tendency to reduce stocks have resulted in a sharp drop in the canned pack. The 1981/82 sweet cherry pack totaled 316,220 cases (basis 24/ 2-1/2's), compared with 427,931 in 1980/81. Despite a 6-percent decline in shipments, stocks on June 1 dipped 50 percent from 1981. Smaller stocks and a smaller crop likely will result in a small 1982/83 supply. Given this situation, canned cherries could sell at a higher price than a year ago.

Tart Cherry Crop Up, Prices Down

The 1982 tart cherry crop is estimated at 336.5 million pounds, a whopping 150-percent increase from 1981. Bad weather in New York and Michigan hurt production somewhat, but outturn remains sharply above a year ago.

The harvest was completed in all States by mid-August. Industry reports show that by August 14, 216.6 million pounds of red cherries went to freezers. During the same period, 341,363 cases of cherries were canned for consumer use, and 246,383 for institutional use. Current raw product price schedules show cherries going for 10 to 16.5 cents a pound, depending on the grade and packer. Although it is too early to make a firm comparison, it seems likely that prices will be sharply lower than in 1981.

Set-Aside Disallowed; USDA Offers To Buy Cherries

The Office of Management and Budget (OMB) refused the Cherry Administrative Board's request to set aside 20 percent of the 1982 crop. USDA, however, offered to buy 8 million pounds of frozen pitted tart cherries for distribution through domestic feeding programs. If implemented, the program will begin November 1 and end February 28, 1983.

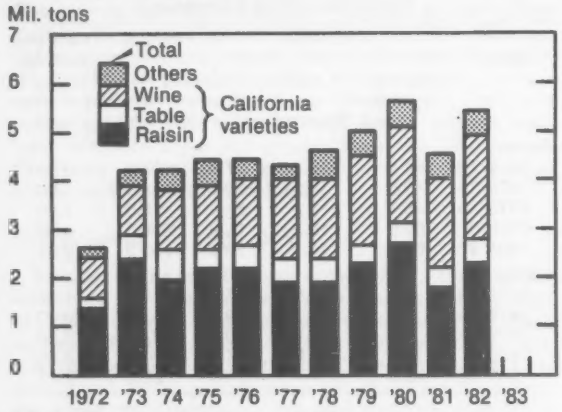
Grapes

Upward Trend Resumed

The August 1 forecast of this year's grape production is 5.38 million tons, 21 percent more than last year but 4 percent less than 1980's record. The California grape harvest—4.90 million tons—is 23 percent above 1981 but 4 percent below 1980. California grape production accounts for 91.2 percent of the U.S. total this year, up from 89.6 percent in 1981. The California raisin grape crop is forecast at 2.30 million tons, 29 percent greater than last year. Development remains later than normal. California's wine grape crop is forecast at a record-high 2.10 million tons, 17 percent larger than last year and 5 percent above the 1980 record. Maturity is about 7 to 10 days behind normal. California table grapes are forecast at 500,000 tons, 19 percent above the 1981 crop and 17 percent greater than 1980's. There have been some reports of high acid and low sugar content.

Total grape production in other States is estimated at 475,600 tons, up 2 percent from 1981 because of substan-

U.S. Grape Production



Total Production. 1982 indicated production.

USDA Neg. ERS 8895-82(8)

tially larger crops in Michigan and New York. The Michigan crop is forecast at 58,000 tons, 9 percent above 1981 and 17 percent more than in 1980. Quality is good with high sugar content and moderate acid. Grape production in New York is forecast at 166,000 tons, 11 percent above 1981 but 5 percent below the 1980 crop. Crop condition is good and bearing acreage is up. However, Washington's crop is forecast at 150,000 tons, 6 percent below last year because of adverse weather, but 3 percent above the 1980 crop. Pennsylvania's crop may be down approximately 10 percent.

Market Outlook

Even with the later season, shipments of table grapes were running significantly above last year's pace through mid-August. Because of smaller supplies early in the season, opening f.o.b. prices for fresh grapes were sharply higher for some varieties than a year ago. With increasing volume, prices have declined to levels that are generally well below last year. In mid-August, f.o.b. prices for Thompson Seedless in Kern County, California, were reported at $10 per 23-pound lug, compared with $9 last year. Supplies of grapes for fresh market will be larger this season because the crop is larger and the market for multipurpose varieties, particularly Thompson Seedless, is expected to decline resulting from relatively large stocks of wine and raisins. Consequently, fresh grape prices will probably remain substantially below a year ago.

Because of larger grape crops in the Great Lake States, increased crushing for juice is expected. A record large wine grape crop and increasing consumption of wine will lead a larger crush in California. However, California growers are expected to receive lower prices than last year for wine variety grapes. Even with the sluggish economy, demand for wine is still good. According to the Wine Institute, wine entering distribution channels in the United States increased 2.2 percent from a year earlier during the first 5 months of 1982. Consequently, inventories in bonded wineries on April 30 totaled 481 million gallons, down slightly from last year. With good demand, wholesale prices of wine in July as reported by BLS were almost 9 percent above a year ago. Continued good demand will keep wine prices high.

Table 8—Nectarines: Acreage, production, yield per acre, 1975 to date

Season	Acreage			Production	Yield per bearing acre
	Bearing	Non-bearing	Total		
	1,000 acres			*1,000 tons*	*tons*
California:					
1975	12.0	5.8	17.8	111.0	9.25
1976	13.2	6.4	19.6	128.0	9.70
1977	13.8	7.7	21.5	155.0	11.23
1978	14.7	8.9	23.6	148.0	10.07
1979	16.5	9.7	26.2	172.0	10.42
1980	18.4	9.0	27.4	191.0	10.38
1981[1]	21.0	7.4	28.4	182.0	8.67

[1]Preliminary.

Source: California Crop and Livestock Reporting Service.

Carryin stocks of raisins at the beginning of the 1982/83 season are moderately smaller than last season. However, since a sharply larger raisin grape crop is expected and since wineries are not likely to bid actively for raisin grapes, a larger raisin supply is still likely in 1982/83. Foreign demand for raisins is not encouraging because of intensive competition from Greece and Turkey. U.S. raisin sales have been adversely affected by subsidies in the European Community (EC) which permit Greek producers to sell raisins in the EC at relatively low prices. Consequently, larger supplies and reduced export demand are likely to put some pressure on raisin prices.

Nectarines

The California nectarine crop, at 150,000 tons, is down 18 percent from the record 1981 crop. Heavy rains last spring caused the decline, as the bearing acreage increased again. The estimated 1982 bearing acreage is 22,150, up moderately from a year earlier. With continued gains, the outturn likely should improve next year.

Nectarine shipments through late August ran 75 percent higher than a year earlier, although last season's harvest was later than normal. F.o.b. prices for 2-layer lugs and cartons have been sharply higher than last season. On August 21, the f.o.b. price for nectarines was $7 for a 2-layer lug from California. With harvest virtually ended, it is likely that prices will remain sharply above a year ago.

Peaches

Crop Sharply Down

The 1982 peach crop is forecast at 2.22 billion pounds, a 20-percent drop from a year earlier. California clingstone peaches accounted for 1.08 billion pounds of the total, 10 percent less than 1981. The California freestone crop, at 410 million pounds, is 7 percent less than a year ago. A shortfall in the Southeastern States, especially South Carolina, was the chief cause of the sharply lower outturn.

Although yields exceeded earlier expectations, the South Carolina crop, at 190 million pounds, is 56 percent smaller than 1981. The other Southern States also experienced noteworthy declines. North Carolina exhibited the most devastating setback, down from 40 million

pounds in 1981 to 2 million in 1982. The New Jersey crop is estimated at 75 million pounds, down 17 percent. Pennsylvania, on the other hand, had a substantially larger crop and replaced New Jersey as the fourth largest producer.

Shipments Lower, Prices Higher

Shipments of fresh peaches were down sharply from 1981. The decline was largely attributed to the dearth of South Carolina peaches and to their early harvesting. However, California partially compensated for the fresh peach shortfall. F.o.b. prices from all sources (South Carolina, New Jersey, Michigan, Appalachia, and California) were up sharply from last season. In late August, California peaches in the central and southern San Joaquin Valley were quoted at $4.90 per 2-layer lug tray pack of 56-64's, compared with $3.69 in 1981. Given the overall downturn in production and the close of the season, prices for fresh peaches will likely remain sharply above last year.

Canned Clingstone Carryin Up, Freestone Down

Although the 1982 clingstone crop is down, the carryin on June 1, 1982, totaled 7.87 million cases (basis 24 2-1/2's), up 18 percent from 1981. Consequently, the sharply larger carryin should help offset the smaller pack, and the total supply of canned peaches will be adequate for market needs during 1982/83. Industry sources look to shipments—domestic and foreign—as the key to the 1982/83 season, with the Cling Peach Advisory Board seeking ways to stimulate consumer demand.

The July BLS wholesale price index at 307.4, (1967=100), was up 11 percent from 1981 and 3 percent from a month earlier. Processing costs will be up, but sluggish demand and a generally sluggish economy will likely moderate price increases.

The total 1982 freestone crop is estimated at 1.14 billion pounds, a sharp decline from a year earlier. There also was some diversion to fresh sales, as California compensated for the shortfall in the Southeastern States. The 1982/83 carryin is estimated to be 432,668 cases (24 2-1/2's), a 41-percent decline from last season. As a result, the base price for canning, at $137.50 per ton, advanced 8.8 percent, reflecting the expected tight supply of canned freestones.

Exports Remain Down

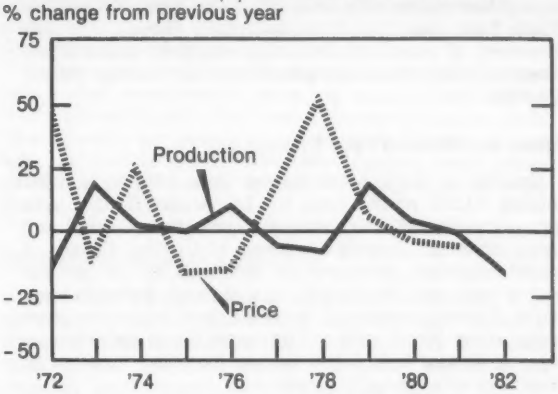
The overseas market for canned peaches continues to be weak. Canada and the EC exhibited sharp declines, with shipments to Canada through June down 15 percent, and West German imports down 64 percent from a year earlier. Total U.S. exports through June were down sharply from 1981, because of sluggish economies, EC processing subsidies, and a strong U.S. dollar.

Pears

Sharply Smaller Crop

As of August 1, the 1982 pear crop was forecast at 743,350 tons, 17 percent less than last year. Bartlett production in the three Pacific Coast States was forecast at 476,000 tons, down 20 percent. A sharply smaller California crop was chiefly responsible. At 255,000 tons, California Bartlett output will be down 30 percent from 1981 and account for only 54 percent of the U.S. Bartlett crop, compared with 62 percent a year earlier.

U.S. Pears: Changes in Production and Prices



Utilized Production. Season average grower prices. 1982 indicated production.

USDA

Neg. ERS 638-82(8)

Production of pears other than Bartlett in the Pacific Coast States, is forecast at 223,500 tons, 13 percent less than last year. All three States expect smaller crops with a 12.5-percent decline for both Oregon and Washington and a 15-percent decrease for California. Output from other Western States (Colorado and Utah) is also expected to be significantly smaller. Most of the remaining U.S. pear production is centered in Michigan and New York, where the crops are up 22 and 20 percent, respectively.

Early Season Prices Well Above Last Year

California's Bartlett pear harvest got underway later than last year; consequently, shipments from that State through mid-August were running well behind last year's pace. With limited supplies early in the season, opening f.o.b. prices were $15.50 per standard box, U.S. No. 1, Sacramento Valley, sharply above last year. As volume increased, prices declined appreciably and in mid-August, Bartlett pears were quoted at $10.95 a box of 100-125 size, U.S. No. 1 in Sacramento, compared with $12 a year ago. Even though the 1982 Bartlett pear crop is expected to be 20 percent smaller, supplies of Bartletts for fresh market are not expected to decline appreciably. Demand from packers is not likely to be strong because of signficantly larger carryover stocks. Consequently, the season average price for Bartletts is not likely to be above last year. Also, even with the expected large drop in winter pear production in the Northwest, prices may not rise much because of the substantially larger apple supply. In August, California growers and canners agreed on a field price of $135 a ton for No. 1 grade Bartletts, compared with $165 last year, reflecting a significantly large carryover stock of canned pears.

Stocks of canned pears in June were 7 percent above a year ago. Thus, even with an anticipated smaller pack this year, the total supply of canned pears will still be adequate to meet market needs. If the sluggish economy continues, shipments of canned pears will remain weak.

Consequently, prices of canned pears are not expected to strengthen appreciably even with the reduced supplies. Prices have been slightly to moderately above a year ago. However, if movement remains sluggish, packers are likely to offer occasional promotional allowances during 1982/83.

Fresh and Canned Pear Exports Up

Exports of fresh pears during July 1981-June 1982 totaled 52,227 metric tons, up 13 percent from a year ago, primarily reflecting strong shipments to Canada and Latin America. Despite the strong U.S. dollar, Canada, a major importer, increased its purchase by 36 percent over a year ago, due mainly to a reduced domestic crop. Latin America continued to show good gains and now ranks as our No. 2 market. However, the sluggish economy and strong U.S. dollar caused European imports to drop 38 percent from last year.

Exports of canned pears also showed good gains, up 10 percent from 1980/81. Shipments to Europe totaled 729 metric tons during June 1981 to May 1982, primarily reflecting a sharp increase from Denmark and Sweden. However, Canada, our major market, reduced its purchase by 16 percent.

Plums and Prunes

The California plum crop is forecast at 125,000 tons, 37 percent below the record high 1981 crop. Plums generally sized better than anticipated early in the season. Because of the smaller crop, shipments ran significantly behind last year's pace. Opening f.o.b. prices were well above a year ago. As the volume increased, f.o.b. prices declined. In mid-August, f.o.b. prices for Friar plums, 3X3 sizes, in the Central and Southern San Joaquin Valley, were reported at $14.70 per 28-lb. carton, compared with $6.60 a year ago.

Production of prunes and plums in Idaho, Michigan, Oregon, and Washington is forecast at 60,800 tons, 11 percent less than last year. Prospects in Idaho, Michigan, and Washington are below last year, but Oregon's crop is expected to remain unchanged. The Michigan crop is forecast at 10,000 tons, down 38 percent. A short bloom period and poor set caused the reduction. Quality and sizing are good. Idaho expects a crop of 6,800 tons, off 9 percent, due to spring frost and hail damage. Washington will harvest 14,000 tons this year, down 4 percent. Trees came through the winter in relatively good condition and a good bloom and set were reported. However, June drop was heavier than expected. Opening f.o.b. prices for fresh prunes in the Yakima Valley, were well above a year ago. In mid-August, f.o.b. prices for Italian type prunes (No. 1 grade, 1-1/4 inch minimum), were quoted at $8 per 30-pound carton, compared with $5 a year ago. Prices will decline as the volume increases seasonally, but are likely to remain above a year ago.

California dried prune production is forecast at 135,000 tons, 15 percent less than last year. Fruit maturity is about a week later than normal. Even with a substantially larger carryover, the total supply for 1982/83 will be moderately smaller than last season. According to the Prune Administrative Committee, shipments for 1981/82 totaled 158,873 tons, up 3 percent from the preceding season as larger exports more than offset smaller domestic shipments. Exports accounted for 41 percent of the total shipments, compared with 37 percent last season. Sharply larger shipments to Germany, the United Kingdom, Russia, and Japan were chiefly responsible. The smaller domestic shipment was mainly caused by sharply reduced use in prune juice and concentrate.

BERRIES

Cranberries

Record Crop

Preliminary forecasts indicate the 1982 cranberry crop, at 2.75 million barrels, to be the largest on record. Production rose 6 percent from last season, and 2 percent above the record 1980 crop. Massachusetts and Wisconsin, the two leading producers, grew 8 and 6 percent more, respectively, than a year ago. Of all producing States, only Washington experienced a smaller crop.

The proportion of cranberries used in processing decreased from 84 percent in 1981 to 76 percent of the crop. New Jersey and Washington sold their entire crops to processors. The average price jumped to $39.70 per barrel, up sharply from the previous year, due mainly to reduced supplies. This season, prices will likely be down moderately because of the record crop.

Strawberries

Shipments Up Over Last Year

Shipments of fresh summer strawberries currently exceed those of 1981, largely because of good growing weather this season. Volume was expected to increase around September 1. Total California shipments to processors through August 21, at 169.8 million pounds, were 61 percent more than a year earlier. Deliveries from Washington peaked toward early July, and were finished by late July. The 1982 total was 12.6 million pounds, compared with 10.3 million in 1981. Oregon shipments peaked at about the same time, but lasted through August. Shipments totaled 53.7 million pounds, up 19 percent from a year earlier.

During October 1981 to June 1982, U.S. imports of Mexican strawberries (fresh and frozen) were 49 percent less than a year earlier. In August, U.S. growers received 66.6 cents a pound for fresh strawberries, up substantially from 1981 because of the diversion to freezers and an overall increased demand for fresh fruit.

Deliveries to Freezers Exceed Expectations

Through August 21, strawberries delivered to freezers in the West Coast were up from all the areas, ranging

Table 9—Strawberry deliveries for freezing to August 21

State	1981	1982
	Million pounds	
California	105.6	169.8
Oregon	45.1	53.7
Washington	10.3	12.4
Total 3 States	161.0	235.9

Source: America Institute Food Distribution.

from 19 percent for Washington to 61 percent for California than a year earlier. The total delivery so far this season amounted to 236.1 million pounds, up 47 percent from last year. Cold storage stocks on July 1 totaled 135.4 million pounds, a substantial drop from 1981. The downturn in stocks likely explains the increase in freezer use. Larger shipments have put downward pressure on prices, and frozen strawberry prices are likely to continue to decline throughout the fall.

CITRUS

The final forecast of the 1981/82 citrus crop at 12.2 million tons, is almost 20 percent less than last season. A sharply smaller orange crop, particularly in Florida, was the chief contributing factor. Smaller crops were also recorded for Temples, tangerines, and lemons. Consequently, season-average grower prices for these crops are expected to be moderately to substantially above last season.

Oranges

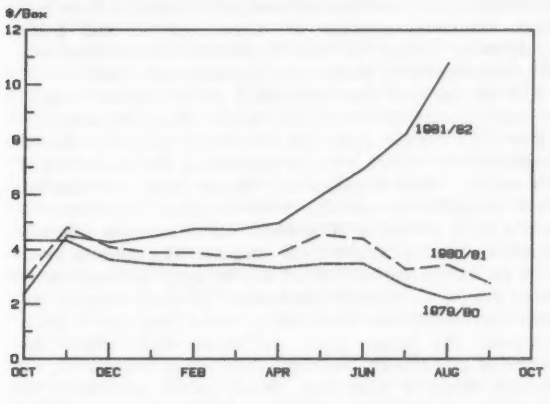
Remaining Supplies Well Below Last Year

Because of the smaller crop and larger shipments, remaining supplies of California Valencias as of August 18 were almost 80 percent below a year ago according to the California Valencia Administrative Committee. Shipments of these oranges for fresh use were up due entirely to higher domestic sales, while exports were down slightly. Consequently, fresh sales accounted for 75 percent of the total shipment. Processing use was down sharply in both absolute and relative terms. With greatly reduced supplies, the season is likely to finish much sooner than last.

Sharply Higher Fresh Orange Prices

The Florida freeze and smaller California orange production have contributed to sharply higher orange prices destined for the fresh market. In August, U.S. on-tree returns for fresh market averaged $13.02 a box, 107 percent higher than a year ago. The smaller remaining supplies, coupled with seasonally declining supplies of fresh summer fruit, will keep orange prices strong until this fall when the new season gets underway.

All Oranges: U. S. Equivalent On-Tree Returns Received by Growers



Higher grower prices and rising marketing costs have also pushed retail orange prices well above a year earlier. The BLS retail price for fresh Valencia oranges in July was 52 cents per pound, compared with 40 cents a year ago. In view of smaller available supplies, retail prices are expected to remain up until the beginning of next season.

Moderately Smaller Exports

Reflecting sharply reduced shipments to Europe, U.S. exports of fresh oranges during the 8 months ending in June 1982 totaled 290,541 metric tons, down 9 percent from a year ago. The strong U.S. dollar and sluggish economy have severely hurt U.S. orange sales in European markets. In particular, shipments to France, the Netherlands, the United Kindgom, and Belgium-Luxemburg fell dramatically. Canada, the largest customer, purchased 9 percent less than last year. On the other hand, the liberalization of the import quota for U.S. oranges led to sharply larger exports to Japan. Consequently, Japan became our third largest market. With a slight increase in purchases, Hong Kong remains our second largest customer. It is expected that exports of U.S. fresh oranges during the entire 1981/82 season will be smaller than a year earlier.

Good demand and sharply reduced supplies have resulted in strong imports of fresh oranges, including Mandarins. During the first half of 1982, imports totaled 17,415 metric tons, up 173 percent from a year earlier. Purchases from Mexico, the leading supplier, rose 133 percent. Imports from Israel more than doubled. The two countries accounted for 85 percent of total U.S. purchases.

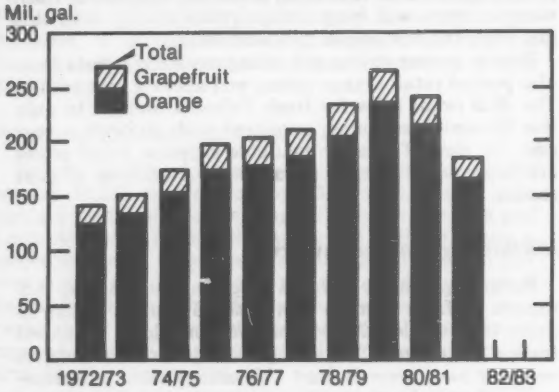
FCOJ Pack Well Below Last Season

The smaller Florida orange crop caused a sharply reduced FCOJ pack. The 1981/82 pack, at 133.4 million gallons, was down 23 percent from the previous season. The Florida FCOJ yield is estimated at 1.28 gallons per box at 42.0 degree brix equivalent, compared with the 1980/81 yield of 1.21 gallons per box at 43.4 degree brix equivalent. Consequently, even with the sharply larger carryover and heavy imports—particularly from Brazil—the total supply available for marketing is still likely to be significantly less than last season.

Although f.o.b. prices of FCOJ have been below a year ago, movement has not improved significantly. Through August 21, total movement amounted to 168.4 million gallons, down 5 percent from 1980/81. The current price, at $3.95 per dozen 6-ounce cans (unadvertised brand, f.o.b. Florida packers) is down from a high of $4.45 before the freeze and down from $4.25 a year earlier. Because of the sharply smaller pack, stocks on hand as of August 21 were 97.8 million gallons, down from 115.3 million a year earlier. If movement continues at this rate, the carryover will be considerably lower than last season.

Because of relatively slow movement, retail prices of FCOJ have weakened somewhat. In July, the BLS reported that retail prices of FCOJ, although slightly above a year earlier, had declined further to $1.44 a 16-ounce container. If movement doesn't improve signifi-

Florida Packs of Chilled Citrus Juice



Season beginning October. Includes pack from fresh and frozen concentrates. Pack for 1981/82 through August 14.

USDA Neg. ERS 2189-82(8)

cantly, retail prices are not expected to strengthen during the balance of the season.

Supplies of Chilled Orange Juice Down Significantly

Florida's 1981/82 output of chilled orange juice to August 21 totaled 167.7 million gallons (excluding single-strength reprocessed), down 12 percent from last year, reflecting both sharply reduced tonnage of fresh oranges utilized and smaller quantities of frozen concentrates processed. As usual, more chilled juice was processed from fresh oranges than from frozen concentrates. Fresh oranges processed for juice accounted for 51 percent of the total chilled juice pack, almost the same as a year earlier. The total pack for this season will not match last season's and will mark the second yearly decline.

Higher prices and the sluggish economy have caused weak demand for chilled orange juice. Through August 21, smaller movement was recorded for both domestic and export markets. Reflecting the sharply reduced movement, stocks on hand as of August 21 were up almost 7 percent from a year earlier.

Smaller Supplies of Canned Orange Juice

Smaller carryin stocks and a reduced pack have resulted in substantially smaller supplies of canned single-strength orange juice. Total pack so far this season is running 13 percent below last year. Even with the f.o.b. price remaining steady at $9.75 a dozen 46-ounce cans (single-strength unsweetened), the same as a year ago, movement is down 9 percent from last year. However, the smaller pack more than offset the reduced movement, leaving stocks as of August 21 almost 18 percent lower than a year ago. But due to the slack movement, prices are not likely to strengthen.

Grapefruit

Ample Remaining Supplies

The final forecast for the 1981/82 U.S. grapefruit crop, at 72.4 million boxes, is 7 percent above 1980/81. Remaining supplies are from California's southern coast areas and are usually marketed fresh during the summer. Supplies are expected to be ample until the 1982/83 season gets underway this fall.

Because of the larger crop, U.S. on-tree returns for fresh grapefruit have averaged below a year earlier for each month of the 1981/82 season except October and February. In August, on-tree returns for California fresh grapefruit averaged $4.28 a box, compared with $6.36 last year. With the ample supplies, grapefruit prices received by growers are expected to remain lower during the balance of the season.

Sluggish Exports

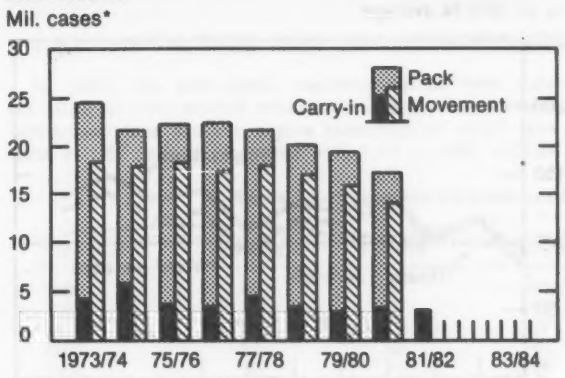
The sluggish economy and the strong U.S. dollar have caused U.S. exports of fresh grapefruit to decline. During the 10 months ending in June 1982, U.S. exports totaled 245,934 metric tons, down 10 percent from a year ago. Japan, our leading customer, purchased 11 percent less, but still accounted for half of total shipments. Canada, the second largest purchaser, also showed a substantial decline because of the continued depreciation of Canadian currency against the U.S. dollar. Shipments to Europe were also sluggish, reflecting primarily the weak markets in France, Italy, and the Netherlands. These three countries accounted for almost 85 percent of total European purchases. However, Belguim-Luxemborg, Finland, and Hong Kong made significantly larger purchases of U.S. fresh grapefruit over a year ago.

Grapefruit Juice Pack

With continued good demand, Florida packers have processed more frozen concentrated grapefruit juice (FCGJ) this season than in 1980/81. So far, approximately 21.9 million gallons (excluding reprocessed) have been packed, up 5 percent from last year. Thus, the larger pack, coupled with sharply larger carryin stocks, have resulted in sharply larger supplies during 1981/82 than a year ago. F.o.b. prices of FCGJ had been steady at $3.60-$3.62 per dozen 6-ounce cans (unadvertised brand) until mid-June when Florida packers offered promotional allowances to reduce prices twice to $3. The second promotional allowance expired on July 16 and prices returned to $3.60-$3.62. This compares with $3.78 a year earlier. The promotional allowances have stimulated sales. Through August 21, total movement amounted to 14.5 million gallons, up 12 percent from last year. However, because of larger carryin and pack, stocks as of August 21 were 22 percent above a year earlier. Consequently, prices may weaken some more.

Florida packers also processed more canned single-strength grapefruit juice this season than last, amounting to 15.3 million cases (24-2's), up 12 percent. Consequently, even with a smaller carryin at the beginning of the season, total supplies are larger than last season. With sluggish movement, a promotional allowance to reduce f.o.b. prices to $6 a dozen 46-ounce cans (Florida canneries) was effective until August. The current price is $6.40, compared with $8.50 a year ago. In response to lower prices, movement improved. Through August 21, total movement ran moderately above last year's pace. However, the larger pack still more than offset the increased movement—leaving stocks as of August 21, 18 percent above a year ago. F.o.b. prices are likely to remain at the current level through the balance of the season.

Florida Canned Grapefruit Juice: Pack, Movement and Stocks



*24/2's. Season beginning October.
Source: Florida Citrus Processors Association.

USDA Neg. ERS 131-82(8)

In contrast, Florida packers so far have processed 20.5 million gallons of chilled grapefruit juice (excluding single-strength reprocessed), down 11 percent from a year ago, entirely reflecting a smaller quantity of fruit utilized. Juice processed from FCGJ increased sharply from last year. Because of higher prices, a total of 20.7 million gallons had been shipped, a 10-percent drop from last year. To stimulate sales, packers have offered promotional allowances. Despite sluggish sales, the smaller carryin and pack caused stocks as of August 21 to be well below a year earlier.

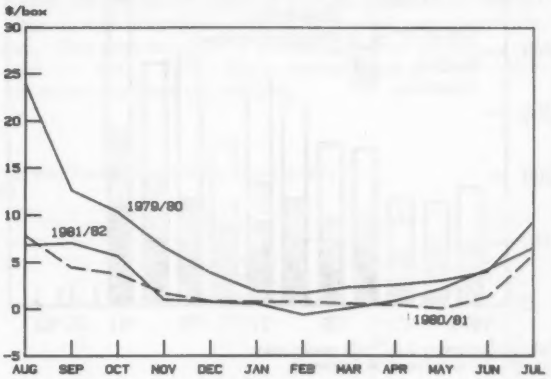
Lemons

California and Arizona harvested approximately 24.7 million boxes this season, 22 percent less than in 1980/81. In California, harvesting was completed at about the same time as a year earlier, with the southern coastal area finishing last. Fresh shipments, both foreign and domestic, suffered setbacks because of the quarantine of California fruits and vegetables caused by infestation of the Mediterranean fruit fly. However, industry estimates indicate that domestic shipments for 1981/82, at 12,871 carloads, were down only 1 percent from 1980/81.

Processing use dropped substantially; this season it accounted for 60 percent of the total, compared with 66 percent a year earlier. The export situation was influenced somewhat by the fruit fly quarantine, but more especially by the continued strength of the dollar and reduced supplies. From August 1981 to June 1982, total fresh lemon exports declined 18 percent. The EC registered the largest decrease, down 58 percent from a year ago. Japan, the chief importer, bought moderately less. Canadian imports also declined moderately. Export prospects for the upcoming season will rest on the strength of the U.S. dollar, the recovery of the economy abroad, competition from other lemon-producing nations, and the quality of lemons.

In response to the sharply smaller supplies, prices rose substantially. The 1981/82 season average price for fresh lemons was $9.06 a carton, compared with $8.09 a year earlier. Industry estimates indicate that the

All Lemons: U.S. Equivalent On-Tree Returns Received by Growers



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1982/83 lemon crop will decline moderately from last season. If this forecast holds true, prices are likely to rise somewhat.

Limes

Lime Crop Up For Third Year

The 1982/83 lime crop is forecast at 1.5 million boxes, up 15 percent from 1981. Lime trees did not sustain any severe damage from either the 1981 or 1982 freezes. The bearing acreage continues to climb as well, also contributing to the expected record production. The 1980/81 bearing acreage reached 5,500 acres. For 1980/81, yield was estimated at 218 boxes an acre; a moderate decline from the previous season.

Despite the increased supply, prices are up sharply. In late August, f.o.b. prices in Florida were quoted at $3.29 per 10-pound carton of 48-63's, compared with $1.50 a year ago.

TREE NUTS

Almonds

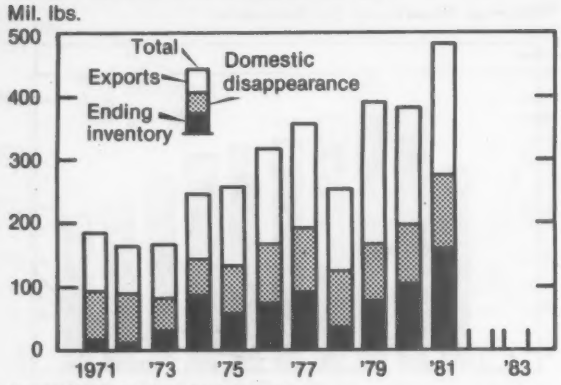
Crop Down Moderately, Trade Prospects Good

The 1982 California almond crop is forecast at 365 million pounds, down 10 percent from a year earlier. The slight decrease in bearing acreage and the decline in yield, which was caused by heavy rains during the spring, account for the lower outturn.

Harvest is expected to be a week to 10 days later this year because of cooler weather. The cool weather has also retarded insect infestation, and could enhance the overall quality of the crop.

The Almond Board of California reports shipments totaled 323.8 million pounds (kernel weight) in 1981/82, a substantial increase from the previous season. A 15-

U.S. Almond Supply and Utilization



Season beginning July. 1981 preliminary.
Source: Almond Board of California.

USDA Neg. ERS 2188-82(8)

percent increase in total U.S. shipments last year helped move the record crop. Demand is a key factor for almond prices in 1982. Industry estimates look for another 10 to 15 percent increase in shipments this season.

Export sales, which increased 11 percent from 1980/81, will be influenced more by foreign supplies than the strength of the dollar. Italy is not expected to affect the world market much this year because of a substantially lower crop. The Spanish almond supply rose slightly, but Spanish farmers are holding almonds as an inflationary hedge until the value of the peseta improves, and are not expected to release more than 132 million pounds.

In 1981, the U.S. average grower price was 71 cents a pound, almost half the previous year's price. The moderately lower crop and anticipated good demand should cause prices to rise above the previous season.

Walnuts

California Crop Moderately Smaller

The 1982 California walnut crop is forecast at 200,000 tons, down 11 percent from the record 1981 crop but up slightly from 1980. A 2-percent decline in bearing acreage and heavy rains earlier in the year help explain the drop in production. The crop currently appears to be of high quality, with the average nut size larger than a year ago. Maturation will be approximately a week later than normal, due to bad weather last spring.

During 1981/82, total walnut shipments were up 11 percent from the previous season. Both domestic and export sales increased from a year earlier. Domestic shipments totaled 305.4 million pounds (in-shell basis) while exports totaled 130.5 million. Of the EC-10, West Germany remains the leading buyer, taking 35 percent of total EC imports. The EC itself is the largest buyer of U.S. walnuts, taking over half of total exports.

The outlook for the export market continues good. French production will likely be back to normal this year. However, relations are good between the California and French walnut industries, which helps minimize the likelihood of EC regulatory sanctions. If the strength of the dollar continues to decline, this too could improve export prospects for walnuts.

California Walnuts: Acreage, Production and Yield Per Acre

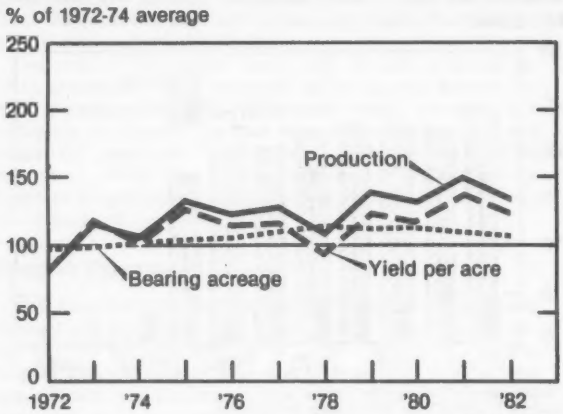


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Table 10—Tree nuts: Production, 1980, 1981, and indicated 1982

Crop and State	1980	1981	1982
		1,000 lbs	
Almonds: (Shelled)			
California	322,000	407,000	365,000
		Tons	
Walnuts, English: (In-shell)			
California	197,000	225,000	200,000

Source: Crop Production, SRS.

Table 11—Tree nuts in cold storage, June 30

Kinds	1980	1981	1982
		Million pounds	
Almonds:			
In-shell	1.0	1.4	0.9
Nutmeats	42.8	64.7	84.4
Walnuts:			
In-shell	20.2	22.8	16.9
Nutmeats	21.3	18.1	26.1
Filberts:			
In-shell	.8	1.6	.6
Nutmeats	1.3	1.6	1.5
Pecans:			
In-shell	39.3	19.2	96.5
Nutmeats	27.7	22.0	28.6
Other tree nuts:			
In-shell	7.3	8.0	4.9
Nutmeats	12.4	9.8	9.9
Total:			
In-shell	68.6	53.0	119.8
Nutmeats	105.5	116.2	150.5

Source: Cold Storage Report, SRS.

In 1981, prices showed a moderate improvement from the previous season, despite the record crop. Improved domestic and foreign demand put an upward edge on 1981 prices. The average grower price rose to $997 a ton, compared with $936 in 1980. With good demand and a

smaller crop, it is likely that grower prices could moderately advance again this season.

PER CAPITA TREE NUT CONSUMPTION

In 1981, the per capita consumption of tree nuts declined for the second consecutive year. Preliminary estimates place the per capita consumption of all tree nuts at 1.67 pounds, compared with 1.73 in 1980. Of the five major nuts (almond, filberts, pecans, walnuts, and Macadamias), only almonds and walnuts registered gains. Per capita almond consumption rose from 0.42 pound per person in 1980 to 0.51 in 1981, while walnut consumption increased from 0.51 to 0.54 pound per person. The consumption of pecans declined sharply, from 0.38 to 0.20. Per capita consumption of all other varieties remained unchanged.

Table 12—Tree nuts (shelled basis): Per capita consumption, crop year, 1960-81[1]

Crop year[2]	Almonds	Filberts[3]	Pecans	Walnuts	Macamias	Other[4]	Total
1960	.30	.07	.36	.32	.004	.52	1.57
1961	.28	.07	.44	.30	.006	.53	1.63
1962	.27	.05	.27	.32	.008	.56	1.48
1963	.27	.05	.45	.32	.010	.47	1.57
1964	.30	.05	.43	.41	.012	.56	1.76
1965	.31	.06	.52	.33	.013	.56	1.79
1966	.33	.07	.41	.37	.013	.54	1.73
1967	.30	.07	.40	.37	.012	.59	1.74
1968	.33	.07	.39	.33	.016	.68	1.82
1969	.30	.05	.42	.34	.015	.58	1.71
1970	.34	.06	.36	.38	.020	.60	1.76
1971	.37	.07	.38	.42	.021	.62	1.88
1972	.36	.07	.38	.39	.019	.72	1.94
1973	.26	.10	.36	.40	.017	.57	1.71
1974	.26	.05	.34	.43	.023	.45	1.55
1975	.35	.08	.33	.52	.025	.61	1.91
1976	.42	.08	.29	.52	.026	.56	1.89
1977	.45	.07	.31	.51	.027	.33	1.70
1978	.40	.08	.33	.39	.028	.47	1.70
1979	.37	.04	.40	.47	.036	.41	1.73
1980	.42	.05	.38	.51	.044	.33	1.73
1981[5]	.51	.05	.20	.54	.044	.33	1.67

[1]Civilian consumption only. Beginning 1960, includes Alaska and Hawaii. [2]Beginning August of year indicated for filberts and walnuts, July for all others. [3]Filbert crop year change from beginning August to May beginning with year indicated 1981. [4]Includes the following nuts; Brazil, pignolia, pistachios, chestnuts, cashews, and miscellaneous. [5]Preliminary.

Note: See September 1970 (TFS-176) Fruit Situation for data prior to 1950.

Table 13—Noncitrus fruit and berries: Production and utilization, United States, crops of 1965-81

Year	Utilized production	Utilization of sales			
		Fresh		Processed[1]	
		Quantity	Percentage	Quantity	Percentage
	1,000 tons	*1,000 tons*	*Percent*	*1,000 tons*	*Percent*
1965	11,059	3,669	33.2	7,390	66.8
1966	10,427	3,639	34.9	6,788	65.1
1967	8,863	3,220	36.3	5,643	63.7
1968	10,187	3,583	35.2	6,604	64.8
1969	11,433	3,877	33.9	7,556	66.1
1970	10,138	3,536	34.9	6,602	65.1
1971	10,795	3,591	33.3	7,204	66.7
1972	8,667	3,275	37.8	5,392	62.2
1973	11,205	3,561	31.8	7,644	68.2
1974	12,207	4,455	36.5	7,752	63.5
1975	12,660	4,922	38.9	7,738	61.1
1976	12,136	4,748	39.1	7,388	60.9
1977	12,605	4,746	37.7	7,859	62.3
1978	12,790	4,406	34.4	8,384	65.6
1979[2]	14,021	4,589	32.7	9,432	67.3
1980	15,510	5,255	33.9	10,255	66.1
1981[3 4]	13,235	4,931	37.3	8,304	62.7

[1]Processed includes cull and cannery diversion for clingstone peaches. [2]Kiwifruit estimates excluded for 1979; estimated began in 1980. [3]Bushberries discontinued in 1981. [4]Preliminary.

Sources: Noncitrus Fruits and Nuts and Vegetable Reports, SRS.

Table 14—Production and utilization of apples, avocados, and cranberries, United States, crops of 1978-81

Commodity and year	Production		Utilization						
				Processed (fresh equivalent)					
	Total	Utilized[1]	Fresh	Canned	Juice & cider	Frozen	Dried	Other[2]	Total processed[1]
	Thousand tons								
Apples:									
1978	3,798.5	3,772.0	2,105.2	612.1	747.3	103.7	110.5	93.2	1,666.8
1979	4,071.6	4,059.1	2,152.3	668.4	977.4	68.3	127.9	64.9	1,906.8
1980	4,414.2	4,405.2	2,471.1	601.2	1,069.5	83.8	97.4	82.4	1,934.2
1981	3,871.8	3,848.0	2,216.9	504.5	896.2	86.4	98.6	45.6	1,631.1
Avocados[3]:									
1978/79	146.1	146.1	146.1	—	—	—	-	—	—
1979/80	102.3	102.3	102.3	—	—	—	—	—	—
1980/81	226.8	268.8	268.8	—	—	—	—	—	—
1981/82	175.8	175.8	175.8	—	—	—	—	—	—
Cranberries[4]:									
1978	122.9	122.9	20.2	—	—	—	—	—	95.9
1979	123.8	123.8	15.1	—	—	—	—	—	103.4
1980	134.9	134.9	16.3	—	—	—	—	—	113.0
1981	129.7	129.7	24.0	—	—	—	—	—	98.9

[1]Some totals may not add due to rounding. [2]Apples: Includes vinegar, wine, jam, fresh slices for pie making, etc. [3]Includes some processing. [4]Utilized cranberries include shrinkage.

Source: Noncitrus Fruits and Nuts Mid-Year Supplement, SRS.

Table 15—Apples, commercial crop[1]: Total production and season average prices received by growers, 1980, 1981 and indicated 1982 production

State and area	Production[2]			Price per pound	
	1980	1981	1982	1980	1981
	Million pounds			*Cents*	
Eastern States:					
Maine	85.0	80.0	89.0	14.0	17.4
New Hampshire	58.0	45.0	60.0	11.3	19.0
Vermont	50.0	28.0	50.0	15.4	17.3
Massachusetts	100.0	83.0	103.0	14.8	19.9
Rhode Island	5.5	4.5	6.0	15.1	18.5
Connecticut	42.0	38.0	48.0	15.2	17.7
New York	1,100.0	800.0	1,130.0	9.4	12.8
New Jersey	110.0	95.0	120.0	9.6	13.0
Pennsylvania	570.0	400.0	570.0	7.5	9.5
Delaware	13.5	13.1	13.7	8.7	14.1
Maryland	90.0	70.0	80.0	9.7	13.8
Virginia	420.0	465.0	450.0	7.8	10.4
West Virginia	245.0	200.0	260.0	7.8	11.5
North Carolina	410.0	375.0	135.0	6.7	7.5
South Carolina	32.0	36.0	6.0	11.3	8.0
Georgia	36.0	45.0	15.0	12.3	9.3
Total	3,367.0	2,777.6	3,135.7		
Central States:					
Ohio	170.0	100.0	165.0	14.7	20.6
Indiana	71.0	68.0	71.0	12.2	13.8
Illinois	101.0	103.0	98.0	12.1	12.9
Michigan	900.0	660.0	950.0	6.2	9.1
Wisconsin	65.0	59.0	61.0	13.5	14.0
Minnesota	23.0	22.0	23.0	17.1	19.3
Iowa	8.4	11.0	9.5	13.8	15.6
Missouri	56.0	62.0	45.0	12.0	16.4
Kansas	11.0	14.0	12.5	10.3	10.3
Kentucky	19.0	21.0	12.0	14.3	13.0
Tennesse	8.0	11.0	4.0	16.4	12.9
Arkansas	10.0	23.0	14.0	9.0	9.6
Total	1,442.4	1,154.0	1,465.0		
Western States:					
Idaho	165.0	135.0	125.0	13.5	16.0
Colorado	70.0	75.0	45.0	8.0	10.0
New Mexico	12.0	17.0	18.0	12.4	12.6
Utah	52.0	54.0	50.0	10.9	10.7
Washington	3,005.0	2,750.0	3,100.0	8.2	11.4
Oregon	195.0	155.0	165.0	7.6	11.4
California	520.0	626.0	480.0	7.0	7.1
Total	4,019.0	3,812.0	3,983.0		
United States	8,828.4	7,743.6	8,583.7	8.7	11.2

[1]In orchards of 100 or more bearing trees. [2]Includes unharvested production and harvested not sold (million pounds): United States: 1980—18.0, 1980—47.7.

Sources: Production, Crop Production and prices, Noncitrus Fruits and Nuts Mid-Year Supplement, SRS.

Table 16—Apples, Yakima Valley, Washington[1]: Monthly average prices per carton try pack, extra fancy, f.o.b. shipping point, 1980/81-1981/82

Month	Red Delicious				Golden Delicious			
	Regular storage		C.A. storage		Regular storage		C.A. storage	
	1980/81	1981/82[2]	1980/81	1981/82[2]	1980/81	1981/82[2]	1980/81	1981/82[2]
				Dollars				
August	–	–	–	15.77	–	–	–	6.88
September	12.38	16.08	–	–	9.88	9.30	–	–
October	9.28	13.15	–	–	7.83	8.67	–	–
November	8.42	14.28	–	–	7.00	9.25	–	–
December	8.50	13.76	–	–	6.80	9.40	–	–
January	8.50	13.68	–	–	6.95	10.38	–	–
February	8.53	13.35	9.63	14.50	7.00	10.00	9.33	12.38
March	–	–	9.74	14.41	–	–	9.49	12.13
April	–	–	9.43	14.07	–	–	8.79	11.18
May	–	–	9.54	14.63	–	–	8.99	11.45
June	–	–	10.16	15.42	–	–	8.51	12.12
July	–	–	12.49	13.43	–	–	7.90	12.48

[1]Apples sizes 88's-113's. [2]Preliminary January through July 1982. C.A. = Control Atmosphere.

Source: Agricultural Marketing Service.

Table 17—Grapes: Total production and season average prices received by growers in principal States, 1980, 1981, and indicated 1982 production

State	Production[1]			Price per ton[2]	
	1980	1981	1982	1980	1981
		Tons			*Dollars*
New York	175,000	150,000	166,000	218.00	248.00
Pennsylvania	56,000	61,000	55,000	167.00	186.00
Ohio	12,000	10,300	10,500	173.00	188.00
Michigan	49,500	53,000	58,000	240.00	271.00
Missouri	4,200	2,200	2,400	257.00	311.00
North Carolina	5,800	5,100	6,000	276.00	318.00
Georgia-South Carolina	4,500	5,600	5,200	388.00	420.00
Arkansas	6,600	6,000	8,500	170.00	227.00
Arizona	12,400	12,400	14,000	1,170.00	1,240.00
Washington	145,100	159,000	150,000	178.00	189.00
California:					
Wine	2,004,000	1,794,000	2,100,000	210.00	266.00
Table	428,000	420,000	500,000	410.00	440.00
Raisin[3]	2,692,000	1,779,000	2,300,000	237.00	306.00
Dried[4]	309,000	256,000	–	1,205.00	1,315.00
Not dried	1,080,000	755,000	–	245.00	275.00
All	5,124,00	3,993,000	4,900,000	241.00	302.00
United States	5,595,100	4,457,600	5,375,600	239.00	297.00

[1]Includes unharvested production and harvested not sold (tons): U.S. 1980—300, 1981—600. [2]Price derived from unrounded data for California all varieties and raisin varieties. [3]Fresh equivalent of dried and not dried. [4]Dried basis, 1 ton of raisins is equivalent to 5.22 tons of fresh grapes for 1980 and 4.00 tons for 1981.

Sources: Production, Crop Production and prices, Noncitrus Fruits and Nuts Mid-Year Supplement, SRS.

Table 18—Peaches: Total production and season average prices received by growers 1980, 1981, and indicated 1982 production

State	Production[1]			Price per pound	
	1980	1981	1982	1980	1981
	Million pounds			*Cents*	
Southern States:					
North Carolina	45.0	40.0	2.0	12.8	13.2
South Carolina	355.0	430.0	190.0	17.6	14.8
Georgia	120.0	140.0	110.0	14.1	11.8
Alabama	14.0	22.0	15.0	22.5	18.1
Mississippi	2.5	3.0	3.0	24.5	19.0
Arkansas	28.0	37.0	32.0	13.5	13.9
Louisiana	4.0	6.0	5.0	32.0	25.0
Oklahoma	8.0	13.0	7.0	17.8	16.7
Texas	12.5	34.0	16.0	28.0	21.0
Total Southern States	589.0	725.0	380.0		
California:					
Clingstone[2]	1,495.0	1,202.0	1,080.0	9.4	10.4
Freestones	476.0	441.0	410.0	9.9	12.3
Total California	1,971.0	1,643.0	1,490.0		
Other States:					
Massachusetts	2.0	0.2	1.9	30.0	35.0
Connecticut	2.8	.3	3.0	30.0	35.0
New York	13.0	9.0	12.0	23.5	23.6
New Jersey	110.0	90.0	75.0	20.8	23.9
Pennsylvania	105.0	65.0	78.0	14.5	17.6
Ohio	12.0	2.0	.3	24.9	31.0
Indiana	8.0	7.0	[3]	25.0	26.1
Illinois	24.0	22.0	[3]	18.5	21.4
Michigan	40.0	35.0	45.0	19.2	19.2
Missouri	12.0	15.0	6.0	14.5	15.0
Kansas	6.5	6.5	3.0	20.0	33.0
Delaware	1.4	1.6	1.7	11.8	18.8
Maryland	19.0	17.0	17.0	13.3	16.3
Virginia	32.0	30.0	27.0	15.6	13.3
West Virginia	22.0	18.0	16.0	13.2	15.3
Kentucky	15.5	16.0	[3]	18.6	21.0
Tennessee	8.4	10.0	1.5	17.8	18.5
Idaho	13.0	12.0	7.0	12.5	16.7
Colorado	18.0	20.0	11.0	17.9	16.5
Utah	11.0	12.0	3.5	17.5	18.6
Washington	31.0	20.0	27.0	17.9	23.6
Oregon	13.0	12.0	13.0	22.3	24.0
Total Other States	519.6	420.6	348.9		
United States	3,079.6	2,788.6	2,218.9	12.4	13.3

[1]Includes unharvested production and harvested not sold (million pounds): United States, excluding California clingstone, 1980—1.5, 1981—34.8. [2]California clingstone is over the scale tonnage and includes culls and cannery diversions (million pounds): 1980-113.0, 1981-96.0. [3]No significant commercial production due to earlier frosts.

Sources: Production, Crop Production and Prices, Noncitrus Fruit and Nuts Annual, SRS.

Table 19—Pears: Total production and season average prices received by growers by States and Pacific Coast, variety comparison, 1980, 1981, and indicated 1982 production

State	Production[1]			Price per ton[2]	
	1980	1981	1982	1980	1981
	Tons			*Dollars*	
Connecticut	1,500	1,600	1,550	470.00	480.00
New York	21,000	17,000	20,500	222.00	219.00
Pennsylvania	3,500	3,000	4,500	299.00	304.00
Michigan	10,000	9,000	11,000	223.00	224.00
Colorado	4,600	7,000	3,600	183.00	174.00
Utah	3,000	3,100	2,700	300.00	330.00
Washington	256,000	270,200	255,000	213.00	200.00
Oregon	200,000	205,000	181,000	189.00	175.00
California	397,700	376,000	263,500	184.00	176.00
United States	897,300	891,900	743,350	196.00	186.00
Pacific Coast:					
Washington:					
Bartlett	143,000	144,500	145,000	185.00	147.00
Other	113,000	125,700	110,000	249.00	261.00
Total	256,000	270,200	255,000	213.00	200.00
Oregon:					
Bartlett	80,000	85,000	76,000	170.00	115.00
Other	120,000	120,000	105,000	202.00	218.00
Total	200,000	205,000	181,000	189.00	175.00
California:					
Bartlett	387,000	366,000	255,000	185.00	176.00
Other	10,700	10,000	8,500	159.00	177.00
Total	397,700	376,000	263,500	184.00	176.00
3 States:					
Bartlett	610,000	595,500	476,000	183.00	161.00
Other	243,700	255,700	223,500	222.00	237.00
Total	853,700	851,200	699,500		

[1]Includes unharvested production and harvested not sold (tons): U.S. 1980—1,000, 1981—3,050. [2]All prices.

Source: Production, Crop Production, and prices Noncitrus Fruits and Nuts Mid-Year Supplement, SRS.

Table 20—Plums and prunes: Production and season average prices received by growers in principal States, 1980, 1981, and indicated 1982 production

Crop and State	Production			Price per ton[1]	
	1980	1981	1982	1980	1981
	Tons			*Dollars*	
Prunes and plums:[2]					
Michigan	12,500	16,000	10,000	208.00	140.00
Idaho	8,000	7,500	6,800	344.00	198.00
Washington	23,100	14,600	14,000	149.00	116.00
Oregon	35,000	30,000	30,000	150.00	133.00
Total 4 States	78,600	68,100	60,800	179.00	138.00
Dried prunes:					
California	168,000	159,000	[3]135,000	683.00	653.00
Plums:					
California	160,000	197,500	125,000	449.00	309.00
United States (fresh basis)	823,240	766,450	590,800		

[1]All prices. [2]Mostly prunes, however, estimates include small quantities of plums in all States. [3]Dry-fresh ratio is 3 to 1.

Source: Production, Crop Production and prices, Noncitrus Fruits and Nuts, SRS.

Table 21—U.S. exports of selected noncitrus fruits, fresh and canned, by destinations, 1979/80-1981/82 season

Item and season[1]	Canada	Europe			Latin America	Other	Total
		EC[2]	Other	Total			
				Metric tons			
Fresh fruit:							
Apples:							
1979/80	60,124	9,762	11,806	21,568	27,051	127,725	236,468
1980/81	39,468	20,486	18,296	38,782	45,336	181,842	305,428
1981/82	65,979	16,589	19,415	36,004	42,533	129,211	273,727
Grapes:							
1979/80	90,206	2,007	1,841	3,848	4,491	17,547	116,092
1980/81	92,248	1,030	1,827	2,857	5,639	21,805	122,549
1981/82	80,704	500	1,415	1,915	5,375	22,967	110,961
Pears:							
1979/80	21,829	1,024	6,334	7,358	8,123	3,778	41,088
1980/81	17,385	1,404	8,945	10,349	11,439	6,939	46,112
1981/82	23,638	723	5,718	6,441	14,708	7,440	52,227
Canned fruit:							
Peaches:							
1979/80	20,462	13,654	5,887	19,541	3,274	18,117	61,394
1980/81	20,176	11,075	3,884	14,959	8,963	14,662	58,760
1981/82	15,358	3,259	2,711	5,970	5,617	12,947	39,892
Fruit cocktail:							
1979/80	18,378	10,552	8,832	19,384	2,760	13,153	53,675
1980/81	17,567	9,226	7,042	16,268	2,869	15,031	51,735
1981/82	15,942	6,200	4,511	10,711	3,366	14,123	44,142
Pineapple:							
1979/80	6,028	2,516	670	3,186	520	1,567	11,301
1980/81	5,058	2,245	245	2,490	158	1,706	9,412
1981/82	7,676	2,445	653	3,098	124	1,667	12,565
Cherries:[3]							
1979/80	554	2,350	69	2,419	195	1,736	4,904
1980/81	822	5,492	98	5,590	251	1,434	8,097
1981/82	379	85	29	114	389	1,316	2,198
Apricots:							
1979/80	408	143	59	202	97	532	1,239
1980/81	220	94	81	175	225	429	1,049
1981/82	316	100	39	139	389	380	1,224
Pears:							
1979/80	832	375	209	584	505	1,375	3,296
1980/81	671	181	397	578	453	897	2,599
1981/82	563	266	463	729	265	1,305	2,862

[1]Season beginning July 1 for fresh apples, pears, and canned cherries; June 1 for fresh grapes and other canned items. [2]Belgium-Luxembourg, France, West Germany, Italy, Netherlands, Greece, United Kingdom, Denmark and Ireland. [3]Excludes Maraschino cherries.

Source: Foreign Agricultural Service.

Table 22—Frozen concentrated citrus juices: Florida canners' stocks, packs, supplies, and movement, current season with comparison

Item & season	Carryin	Pack		Supply		Movement		Stocks[1]
		To date[1]	Total season	To date[1]	Total season	To date[1]	Total season	
				1,000 gallons				
Orange:								
1979/80	37,386	247,093	256,442	284,479	293,328	163,486	238,972	120,993
1980/81	57,281	234,651	249,618	291,932	306,899	173,172	240,647	118,760
1981/82	68,987	196,933		265,920		164,080		101,840
Grapefruit:								
1979/80	2,278	[2]19,482	[2]19,575	21,760	21,853	12,246	16,976	9,514
1980/81	4,876	[2]21,070	[2]21,072	25,939	25,948	12,532	17,548	13,407
1981/82	8,404	[2]21,885		30,289		14,220		16,068
Tangerines:								
1979/80	593	[3]2,142	[3]2,142	2,735	2,735	1,500	1,851	1,235
1980/81	884	[3]1,199	[3]1,199	2,083	2,083	1,455	1,628	627
1981/82	455	[3]943		1,398		869		529

[1]For the 1981/82 season, week ending August 14; 1980/81 August 15; 1979/80 August 16. These respective dates include data through the 37th week of each season. [2]Includes receipts of Florida product from non-members and domestic receipts on non-Florida product. [3]Includes domestic receipts of non-Florida product.

Note: The minimum Brix for FCOJ was reduced from 43.2° to 41.8° effective December 1, 1981. Beginning season 1981/82 all figures for FCOJ, including carryover, will be 42.0° Brix equivalent. Data for 1980/81 and 1979/80 are 43.4° and 45.0° Brix respectively.

Source: Florida Citrus Processors Association.

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A Brief Overview of the U.S. Almond Industry

by

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ABSTRACT: This article reviews some of the rapid changes the U.S. almond industry has been undergoing during the past several years. The demand in both domestic and foreign markets has led to higher almond prices since 1965, and the industry has responded with expanded acreage. With favorable weather and record bearing acreage, the U.S. almond industry is capable of producing a crop of unprecedented size even though the rate of new plantings has subsided in recent years. Consequently, while grower prices will undoubtedly depend on future demand, consumers in the years ahead should find ample supplies of almonds. A price estimating equation was used to identify a set of variables at the farm and retail levels that have the largest influence on almond prices received by growers.

Keywords: Almonds, production, marketing, exports, consumption, prices, price estimating equation.

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The almond is the leading U.S. tree nut, with a crop value during the last 5 years, ranging from $250 to $600 million annually. All of the almonds are grown in California. The 1981 crop was valued at $291 million, surpassing the value of all other California fruit and tree nut crops except grapes. The almond industry has undergone significant changes in structure and behavior, similar in some respects to those characterizing other tree nut industries, but the rate of growth in the almond industry has surpassed that of any other tree nut.

This study presents an overview of the major changes in the almond industry during the last 15 years, focuses on significant developments and trends in production, marketing, foreign trade, consumption, and prices; and to some measure, considers those changes as a basis for assessing industry prospects. Also, regression analysis is used to determine the major economic factors influencing grower prices.

Acreage and Production Keep Expanding

Commercial almond acreage in the United States is concentrated in a central belt in California about 400 miles long. Bearing acreage has steadily increased every year and reached a peak of approximately 332,600 in 1982, near triple the area during the mid-1960's. Although nonbearing acreage has fluctuated widely without a definite trend, it reached a record 82,405 acres in the mid-1970's. The latest data on nonbearing acreage listed 81,500 in 1981. In view of the current area of nonbearing young trees, bearing acreage is expected to continue to increase. However, the rate of increase will likely taper off.

The expansion in the bearing acreage during the last 15 years can be traced to several factors. Numerous changes in almond culture and harvest significantly improved the costs/returns margin during the 1960's. Also, favorable grower prices and greater consumer acceptance due to industry promotion stimulated plantings. Furthermore, foreign demand has continued to improve for many years. Institutional factors were also important, since some investments in almond orchards were probably used as tax shelters for nonfarm investors prior to the enactment of the 1969 tax reform law. Big corporations' interest in almond orchards continued even after 1969, further encouraging expansion of acreage.

Together, all these developments pushed total production and yield per acre to record highs in 1981. Yields have generally fluctuated widely with the weather during the last 17 years, from the low of 595 pounds in 1968 to the high of 1,248 in 1981. Nevertheless, the average yield per acre has increased 58 percent from 1965-67 to 1979-81. The strong gains in yields, combined with a threefold increase in bearing acreage, have resulted in quadrupled production from 1965-76 to 1979-81.

With continued improvement in technology, more trees planted per acre, and the continued increase in bearing acreage, even larger almond outputs are likely in the years ahead.

Aggressive Marketing Proves Successful

The almond industry implemented a Federal marketing order in August 1950. At that time, there was a surplus of almonds in the United States because of a falloff in demand for chocolate almond candy bars following World War II. The surplus was aggravated by large volumes of low priced imports from Spain and Italy, then the world's two leading producers. Both of these countries were impovished by the war, so they subsidized almond exports to earn badly needed foreign exchange.

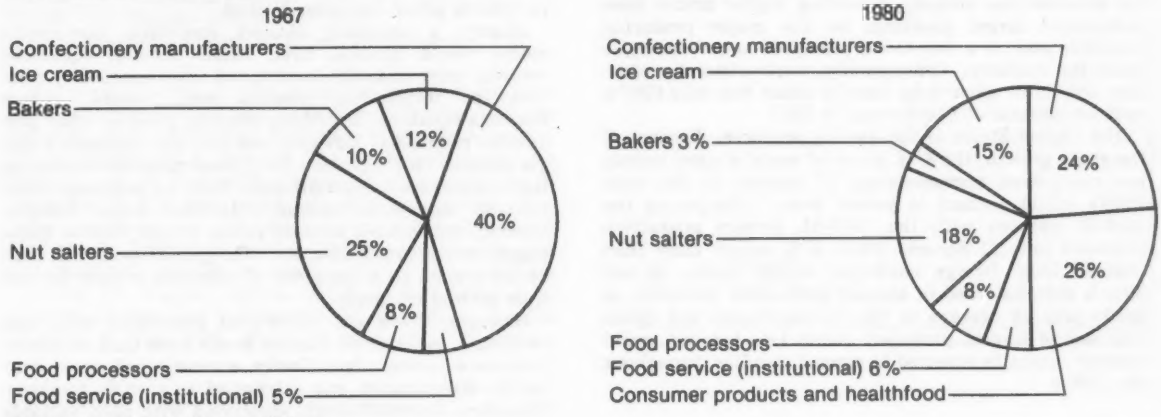
The Federal marketing order is designed to stabilize the market by allocating supplies as salable percentages for domestic buyers, export outlets, new users, or diversions. A percentage of each handler's receipts may be declared as "reserve" to be held for disposition by the Almond Board of California, which is the administrative agency established by the marketing order. The board consists of five growers and five handlers. These are divided into the cooperative marketing group and the independent group, each having two grower and two handler members. The third grower and handler member positions are assigned to either the cooperative or independent marketing group, based on which group marketed more than 50 percent of the total production in the base year. The board recommends to the Secretary of Agriculture the allocation of almonds on the basis of supply and demand. For many years after the 1950 market-

California almonds[1]: Acreage, production, and yield per acre, 1965/66-1982/83

Year	Bearing	Non-bearing	Total	Production	Yield
		Acres		*1,000 lbs.*	*Pounds*
1965/66	117,250	30,920	148,170	79,600	679
1966/67	118,260	50,460	168,720	95,400	807
1967/68	124,600	67,430	192,030	82,800	665
1968/69	135,120	70,130	205,250	80,400	595
1969/70	149,030	71,680	220,710	132,000	886
1970/71	169,920	67,370	237,290	149,000	877
1971/72	187,770	67,448	255,218	162,000	863
1972/73	198,910	69,012	267,922	151,000	759
1973/74	213,562	68,870	282,432	155,000	727
1974/75	231,200	80,487	311,687	230,000	995
1975/76	248,759	82,405	331,164	186,000	748
1976/77	257,854	80,538	338,392	284,000	1,101
1977/78	276,496	64,844	341,340	313,000	1,132
1978/79	307,684	45,293	352,977	181,000	588
1979/80	324,132	41,894	366,026	376,000	1,160
1980/81	326,796	62,183	388,979	322,000	985
1981/82	326,206	81,500	407,706	407,000	1,248
1982/83[2]	332,600			365,000	1,097

[1]Shelled basis. [2]Preliminary.

Distribution of Almonds



Source: Almond Facts May/June 1980.

USDA

ing order, some almonds were designated surplus. However, because of good export markets, the almond crop was recommended as 100 percent salable during the last several years. The reserve provision was temporarily implemented in 1981 because of the record crop, but in April 1982 all almonds held in reserve were released for sale.

The almond crop is marketed by a few major firms and several smaller ones. The leading firm is the California Almond Growers Exchange, a cooperative that markets approximately 50 to 60 percent of the crop, depending on the year. The almond industry has done a successful marketing job in the face of increasing supplies and competition. However, striking shifts have occurred in the market over the last 17 years.

Although sales of almonds to both domestic and foreign markets have increased dramatically, the largest increase has been in exports. In the mid-1960's, almonds sold abroad amounted to 23 million pounds (kernel weight), 29 percent of total shipments. At the beginning of the 1980's, exports had increased almost ten times and accounted for more than 65 percent of total sales. Principal outlets are Canada, West Germany, Japan, France, and the United Kingdom. Germany, the leading customer, has taken almost one-third of the total exports. Japan and France have purchased approximately 10 percent in recent years. However, the Soviet Union recently became an important market. Industry promotion in cooperation with USDA's Foreign Agricultural Service has contributed to the strong foreign demand and will likely continue to bolster exports, as well as provide strong competition for other producing countries.

Shipments to U.S. markets have also increased sharply, even though domestic sales now account for only about 30 percent of the market. Likewise, the distribution of almonds into the domestic markets has shifted considerably. A survey by the California Almond Growers Exchange compared distribution during 1967 and 1980. The use of almonds by confectionary manufacturers, nut salters, and bakers as a percentage of the domestic mar-

ket has declined sharply. Meanwhile, the ice cream industry has advanced its market share from 12 to 15 percent. Food processors did not show any additional growth, ending both years at 8 percent. The institutional users, although a relatively small percentage of total distribution, increased slightly, from 5 percent in 1967 to 6 percent in 1980. These institutional users, including restaurants, probably hold tremendous potential, because consumers are likely to increase their share of dollars for food-away-from-home. Finally, the category termed "Consumer products and health food" has already taken the largest share of the almond market. With increasing emphasis on nutrition, more food manufacturers are considering almonds as health products—such as yogurts, cheeses, and nutritional bars. In addition, the mixed snack packs of dried fruit, tree nuts, and chocolate chips have also boosted the distribution of almonds in this category.

World Production Sets Record

The record U.S. almond crop, combined with larger output in all the major producing countries except Turkey, pushed 1981/82 world volume to an alltime high of 702.8 million pounds (shelled basis). As incomes have risen and tastes have changed to more natural foods, demand for almonds has surged. Resulting higher prices have encouraged larger plantings by the major producing countries and, in a few cases, prompted nonproducers to enter the industry. Consequently, world almond production has been expanding rapidly since the mid-1960's, with an increase of 170 percent by 1981.

The United States is the leading producer. Because of the rapid growth, the U.S. share of world almond output has risen from approximately 30 percent in the mid-1960's to 60 percent in recent years. Comparing the 1965-67 average with the 1979-81, foreign production increased only 11 percent, while U.S. output more than tripled. Most foreign countries, except Spain, do not have a definite trend in almond production. However, as newly planted acreage in the United States and Spain (the second largest producer) comes into bearing, world almond output is expected to expand steadily throughout the 1980's.

Per Capita Consumption Rises

Annual per capita almond consumption has generally trended upward since the mid-1960's. Although per capita consumption is still relatively small, it increased from an average 0.31 pound during 1965-67 to 0.40 pound during 1978-80, an increase of 29 percent. However, because tree nuts are competitive, per capita consumption for all tree nuts remained relatively stable during the period. With continued sales promotion and new product research, almonds have increased their share of total tree nut consumption. Average per capita almond consumption during 1978-80 accounted for 23 percent of total tree nut use, compared with 18 percent during 1965-67. In addition to almonds, per capita consumption of walnuts and Macadamia nuts increased, but the use of pecans and the total for other tree nuts (including Brazil nuts, pignolia, chestnuts, cashews, pistachios, and miscellaneous) declined during the same period. Over the long run, filbert consumption remained steady, but yearly consumption fluctuated widely, reflecting the trees' biennial production.

With the constant introduction of new products and aggressive marketing strategies, per capita almond consumption is likely to increase in the years ahead.

Grower Prices—Estimating Equation and Results

Almond prices were relatively stable at about 55 cents a pound from 1965 to 1971. Thereafter, they advanced to 65 cents in 1972 and soared to a record $1.29 in 1973. The 1973 rise was mainly attributed to good foreign demand; with a devalued dollar and severely reduced crops in Italy and Spain, Europeans purchased more U.S. almonds. Prices reached another record of $1.53 in 1979, reflecting sharply small carryin stocks and strong export demand. A comparison of the 1965-67 and the 1979-81 averages shows that grower prices increased 120 percent. However, because of a record world supply of almonds and a strong U.S. dollar, 1981 producer prices were substantially less than in 1980.

Economic theory suggests that almond prices are influenced by several factors, such as the total almond crop, disposable personal income, prices or supplies of competing tree nuts, export and domestic demand, the carryover, and consumer tastes and preferences. Using some of these determinants, we derived an estimating equation for grower prices has been derived.

Ideally, a complete almond structural commodity model would include, first, retail demand equations treating price-quantity-income and cross commodity relationships influencing demand and, second, supply response equations describing acreage, yield, or other production responses. However, one can also estimate a single reduced-form equation for grower price encompassing the major market determinants. Such an equation would include: disposable income, substitute and/or complementary food prices, nonfood prices, wages, capital costs, lagged prices, production, etc. The grower price will thus be influenced by a sequence of economic events derived from all market levels.

However, there are limitations associated with this procedure, because all market levels have been collapsed into one equation. Specifically, economic influences cannot be disentangled and attributed to specific markets. Therefore, the coefficients associated with each variable will reflect combined influences from many market levels.

A price equation was estimated for 1965-80.[1] Many reasonable specifications were attempted, and the material presented here reflects the best set of results. As an example, competitive nut prices were not found to be significant. The small sample size and strong correlation among some variables limited the number of variables in the equation. Therefore, input prices, such as wage rates and capital costs, were not included.

[1]Production was regressed on lagged acreage to eliminate simultaneous equation bias. The fitted results were then used to proxy the production variable. This equation is available on request from the authors. A more complete explanation of the theoretical structure used to derive this equation as well as discussion of variable selection will be provided in a forthcoming staff report by the authors.

The explanatory variables found to have the most significant influence on grower prices were per capita disposable income, per capita beginning stocks of almonds, almond exports lagged one year, and almond production. Based on 16 years of data, the equation is as follows:

Equation

ALMP = -.095	+.566*YPDN	-.3766*STKN
(-.740)	(5.092)	(-1.051)
+.00005*EXP-1	-.00001*PROD	+.576*DUM
(2.348)	(-4.191)	(4.021)

$\bar{R}^2$ = .91 D.W. = 2.130 Standard error = .111 of regression

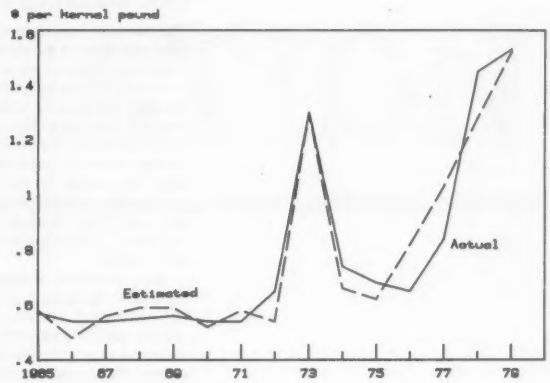
ALMP = Grower price of almonds ($/kernel, lbs).
YPDC = Per capita disposable income (actual).
STKN = Per capita beginning stocks of almonds.
EXP-1 = Almond exports lagged one year (1,000 lbs, kernel weight).
PROD = Almond production (1,000 lbs, kernel weight).
DUM = Dummy variable for 1973.
The "t" statistics are shown in bracketed terms.

Every coefficient in the equation has the expected sign. Income (YPDC) has a positive influence, and the reduced form elasticity indicates price increases by approximately 31.4 percent for each additional 10-percent rise in disposable income. Beginning stocks of almonds (STKN) are negatively related to price. The price decreases by 0.9 percent for every 10-percent increase in beginning stocks. Exports lagged one year are positively related to grower prices. A 10-percent increase in lagged exports (EXP 1) is estimated to increase the price by 4.4 percent. In contrast, production (PROD) is negatively related to price and a 10-percent increase in almond production drops grower prices by 24-percent.

Plots of the estimated and actual values are shown on the accompanying graph. The estimated equation simulates the historical period very well, except for 1973. That year was "dummied out," because, as noted above, reduced domestic production and increased exports led to unusually high prices. An overestimate of 28 cents during 1977 is the largest error for the simulated historical period.

Results from this model are useful in drawing some general inferences about factors affecting almond prices. The variables found to be significant are: disposable income, production, beginning stocks, and exports lagged one year. These variables perform well when tested against recent almond price history. Further work will be required to develop a model with decisionmaking applications. In particular, some quantifiable variable is needed to show the influence of marketing order policy on almond grower prices.

Grower Prices for Almonds



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Two Free Reports on Fruit Marketing Orders

The effects of Federal marketing orders for fruits and vegetables seem to be overrated by both supporters and opponents of the orders, according to a report released last year by USDA's Economic Research Service and still available free from the address below. Prices from 1952-79 for 33 fruits and vegetables covered by marketing orders generally did not exceed prices for similar fruits and vegetables not under orders, nor were prices significantly more stable for order-covered commodities. Even the strongest orders (for California almonds and walnuts), applying to both quality and quantity of the total U.S. crop, did not significantly enhance or stabilize producer prices.

Since the effects of marketing orders seemed to be inconclusive, the authors of a second report, also released last year and still available free from the address below, assessed the probable effects or terminating the two marketing orders in effect for California-Arizona oranges. Using a computer simulation model, the authors concluded that, in the long run, terminating the orders would yield:

- Little change in supplies of fresh fruit.
- Severe curtailment of the western orange-processing industry.
- Little change in prices of fresh oranges.
- Little change in grower returns.
- Shorter shipping seasons.

Probable shortrun effects of terminating the orders would be more severe, however, including lower and more volatile prices and supplies of oranges, and lower returns for producers.

For a free copy of the reports, write to Thomas McDonald-EMS, Room 1664-S, U.S. Department of Agriculture, Washington, D.C. 20250; or call (202) 447-7305. Ask for *Effectiveness of Federal Marketing Orders for Fruits and Vegetables* (AER-471, 47 pages) or *Economic Effects of Terminating Federal Marketing Orders for California-Arizona Oranges* (TB-1664, 46 pages).